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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,227	11/03/2000	Erling H. Wold	AMC-00-003	6504

7590 11/01/2005  
Timothy A Brisson  
Sierra Patent Group LTD  
PO BOX 6149  
Stateline, NV 89448

EXAMINER

OPSASNICK, MICHAEL N

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/706,227

Applicant(s)

WOLD ET AL.

Examiner

Michael N. Opsasnick

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,7-14,17-24,26-29,35-38 and 41-44 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4,7-14,17-24,26-29,35-38 and 41-44 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

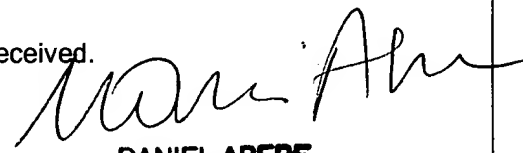
### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



**DANIEL ABEBE**  
**PRIMARY EXAMINER**

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4,7-14,17-24,26-29,35-38,41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulze (4918730) in view of Blum et al (5918223).

As per claims 1,11,21,35 Schulze (4918730) teaches a method (col. 9 lines 45-55), apparatus (figs. 1-4), and storage medium (col. 4 lines 15-27 -- RAM for storing processing results, and other storage mediums) for creating a signature of sampled work (examiner notes that the claim scope of 'sampled work' is an audio signal, applicant's specification, page 1, and page 3 line 20 – page 4 line 2) in real time comprising receiving a sampled work (as digitizing the audio signal -- col. 4 lines 10-15, 25-34)

“segmenting said sampled work.....segments....hop sizes” as storing time segments of the envelope signal (abstract), wherein the segment is preferably 1.7 seconds and the envelope size has a predetermined range (hop, size, col. 2 lines 42-47)

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“creating a plurality of signatures.....segments.....includes calculations of a plurality of acoustic features.....coefficients” as generating envelop signatures (col. 1 lines 48-55; and a further correlation function → col. 9 lines 28-45)

“storing said sampled work signature” as storing the envelope signature (abstract)

Schulze (4918730) does not explicitly teach the use of a reference database storing representative signatures for each of a plurality of known works (Schulze (4918730) teaches storing the current envelope signature – abstract), however, Blum et al (5918223) teaches the use of such database to store signatures (Blum et al (5918223), abstract). Therefore, it would have been obvious to one of ordinary skill in the art of audio signature comparison to expand the memory structure of Schulze (4918730) into an accessible database because it would advantageously allow for the storage of multiple audio signatures, therefore improving upon the number of audio signatures that can be recognized (Blum et al (5918223), col. 1 lines 44-52).

As per claims 2,22,36, Schulze (4918730) teaches:

“includes the act of .....segment size and hop size” as providing multiple envelope signatures (abstract)

As per claims 3,12,23,37, Schulze (4918730) teaches said hop size of work signature is less than reference signatures (col. 2 lines 42-47)

As per claims 4,13,24,38, Schulze (4918730) teaches calculating envelop features for each segment (col. 7 lines 50-65)

As per claims 7,17,26,41, Schulze (4918730) teaches plurality of segments and an identification portion (abstract)

As per claims 8,10,18,27,42, Schulze (4918730) teaches a segment size of 1.7 seconds (col. 1 lines 52-58)

As per claims 9,19,28,43, Schulze (4918730) teaches the hop size to be less than 50% of the segment size (Schulze (4918730) teaches a range of 2 Hz to 50 Hz, which is less than 1/1.7 seconds; col. 2 lines 1-2)

As per claims 10,20,29,44, Schulze (4918730) teaches a hop size of around .1 seconds (a .1 second hop size corresponds to 10 Hz, which falls in the range of 2-50 Hz, as taught Schulze (4918730), col. 2 lines 1-2).

As per claim 11, Schulze (4918730) also teaches creating multiple reference signatures (as time segments) and comparing a sample of the reference signatures for a match (abstract).

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3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Schulze (4918730) in view of Blum et al (5918223) in further view of Foote (6542869).

As per claim 14, the combination of Schulze (4918730) in view of Blum et al (5918223) does not explicitly teach calculating a Euclidean distance between vectors and comparing the result to a threshold, however, Foote (6542869) teaches the calculation of the Euclidean distance (col. 4 lines 55-67; col. 4 lines 45-51), to be used in a vector comparison against a threshold to determine segmentation (col. 8 lines 50-65). Therefore, it would have been obvious to one of ordinary skill in the art of vector measuring to modify the teachings of the combination of Schulze (4918730) in view of Blum et al (5918223) with using Euclidean distance measuring between two vectors versus a threshold of an audio signal because it would advantageously mark areas of significant change in the audio signal (Foote (6542869), col. 8 lines 43-49).

### ***Response to Arguments***

Applicant's arguments filed 3/16/2005 have been fully considered but they are not persuasive. As per applicant's arguments that Schulze is using one acoustical feature for comparison, examiner argues that the first acoustical feature is the envelope feature (as noted above), and the second feature being the referred to correlation function (as noted above as well). Examiner points to the correlation function related to the periodicity of the signal (Schulze, col. 8 lines 14-17), which is different from the argued power density (on pp 11 of applicants response). Examiner also notes the affidavit from Dr. Erling Wold; examiner does not disagree with the

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statement from Dr. Erling Wold, however, examiner notes that the scope of the current claim language allows for statistically dependent acoustic features, which includes the envelope/correlation functions as taught by Schulze.

As per applicant's arguments with respect to the combination of the Schulze reference with Foote, examiner argues that In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Foote provides the motivation combine, i.e., it would advantageously mark areas of significant change in the audio signal (Foote (6542869), col. 8 lines 43-49), and therefore improve the accuracy of recognizing the audio signature.

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

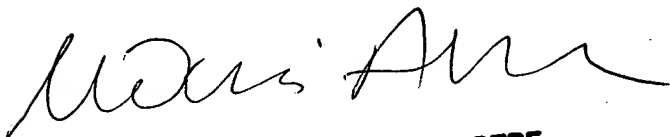
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Wayne Young, can be reached at (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



mno  
10/29/05

**DANIEL ABEBE**  
**PRIMARY EXAMINER**